

REMARKS

Claims 16-37 and 48-54 are pending in the present application. In the Office Action, claims 28-29 were rejected under 35 USC 112, second paragraph, as being indefinite. In particular, the Examiner alleges that these claims mention a "nitrite" but the specification teaches a "nitrate." Claims 28-29 have been amended to correct this typographical error. Applicants respectfully request that the Examiner's rejections of claims 28-29 under 35 USC 112, second paragraph, be withdrawn.

In the Office Action, the Examiner rejected claims 16-19, 21, 23-31, 33, 35-37, 48, 50, and 52-54 under 35 U.S.C. §102(b) as being anticipated by Spiegel, et al (U.S. Patent No. 3,763,051). Claims 16-19, 21, 23-31, 33, 35-30 7, 48, 50, and 52-54 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Dinh (U.S. Patent No. 6,214,419). Claims 20, 32, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Unnai, et al (U.S. Patent No. 4,293,586). Claims 20, 32, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Dinh and further in view of Unnai. Claims 22, 34, and 51 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Kim et al. (U.S. Patent No. 5,723,070). Claims 26-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of any one of Mohacsi (U.S. Patent No. 5,200,233), Dahlquist, et al (U.S. Patent No. 5,569,485), Higton, et al (U.S. Patent No. 4,365,184), or Bryan et al (U.S. Patent No. 4,983,847). Claims 26-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Dinh and further in view of any one of Mohacsi, Dahlquist, Higton, or Bryan. Claims 26 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Dinh or Mohacsi or Dahlquist and further in view of Rabatin (U.S. Patent No. 3,617,743). Claims 26 and 29 were rejected under 35 U.S.C. 103(a)

as being unpatentable over Spiegel in view of Dinh, Mohacsi, Dahlquist, or Higton. Claim 30 was rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Dinh and further in view of Higton, Bryan, and Rabatin. Applicants respectfully traverse the Examiner's rejections.

Independent claims 16, 31, and 48, set forth, among other things, removing a substrate from a binder solution at a predetermined rate to bind phosphor to the substrate. Spiegel teaches a dip-coating process in which a thin, even layer of suspension is formed on a flat flexible surface by dipping a strip of vinyl sheet into a suspension, draining vertically for one minute, then placing the vinyl down upon a flat laboratory bench. The viscosity, surface tension, and drain time combine to produce a reproducible thin layer of suspension on the vinyl sheet. The metallic segments to be coated are then pressed down on the suspension, lifted, and allowed to dry. See Spiegel, col. 2, ll. 22-38.

Applicants respectfully submit that the process taught by Spiegel is completely different than the processes described in the present application. In particular, Spiegel does not describe or suggest that the substrate to which the phosphor is to be bound should be immersed in the binder solution. To the contrary, as discussed above, Spiegel teaches that a vinyl sheet should be immersed in a suspension and then the metallic segment to be coated, *i.e.* the substrate, is pressed down on the thin layer of suspension formed on the vinyl sheet. Furthermore, as admitted by the Examiner, Spiegel fails to teach withdrawing the substrate from the binder solution at a predetermined rate.

Even though the Examiner admits that the process used by Spiegel differs from the process is described in the present application, the Examiner maintains that the product formed by the process described in the Spiegel is identical to or only slightly different than the claimed

article. Applicants respectfully disagree for at least the following reasons. As discussed above, Applicants believe that the Examiner has misinterpreted Spiegel and that Spiegel does not describe bonding phosphor to a substrate by immersing the substrate into a phosphor binder solution, as alleged by the Examiner. To the contrary, Spiegel actually describes a completely different process for applying phosphor to a substrate, *i.e.* immersing a vinyl sheet in a suspension and then pressing a substrate down on the thin layer of suspension formed on the vinyl sheet. Applicants respectfully submit that the Examiner has provided no evidence or argument that the process described by Spiegel should produce a structure that is in any way similar to the claimed article.

Furthermore, Applicants respectfully submit that the products formed by the processes set forth in independent claims 16, 31, and 48 is not the same or an obvious variation of the products described in the prior art of record. Applicants respectfully submit that immersing a substrate in the binder solution and then removing the substrate from the binder solution at a predetermined rate causes the phosphor particles disposed on the substrate to bind stronger to each other and to the substrate itself. Accordingly, because the phosphor particles are bound stronger to each other and to the substrate as a result of the process of removing the substrate from the binder solution at a predetermined rate, it is respectfully submitted that the phosphor particle bounded substrate of the present invention has a structure that is distinct from the structure of the phosphor-coated metallic segments described in Spiegel.

Accordingly, Applicants respectfully submit that these claims cannot be anticipated by Spiegel because the particle bound substrate of the present invention, as defined by claims 16, 31, and 48 (and all claims dependent thereon), is a different product from the phosphor-coated faceplate of Spiegel as a result of the phosphor binding process of the present invention. For at

least the aforementioned reasons, Applicants respectfully request that the Examiner's rejections of claims 16-19, 21, 23-31, 33, 33-37, 48, 50, and 52-54 under 35 U.S.C. 102(b) be withdrawn.

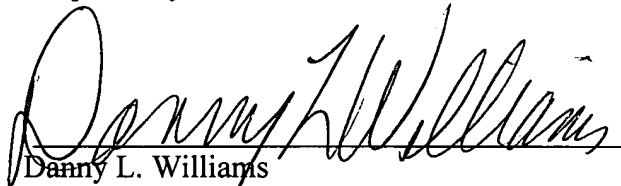
Moreover, it is respectfully submitted that the pending claims are not obvious in view of the prior art of record. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). As discussed above, Spiegel fails to teach or suggest many of the steps set forth in independent claims 16, 31, and 48 and therefore the product formed by the techniques described in Spiegel differs from the claimed products. The Examiner relies upon Dinh to teach that a coating thickness generally increases with the coating material concentration and with the take-up speed. However, since Spiegel fails to teach or suggest immersing the substrate in the binder solution, as discussed above, Applicants submit that there is no suggestion or motivation to modify the techniques described by Spiegel to select any particular take-up speed for a substrate immersed in a binder solution.

Applicants also submit that Spiegel teaches away from the claimed invention. As discussed above, Spiegel teaches that a vinyl sheet should be immersed in a suspension and then the metallic segments to be coated, *i.e.* the substrate, are pressed down on the thin layer of suspension formed on the vinyl sheet. Applicants submit that Spiegel's teaching that the vinyl sheet should be immersed in the suspension and then the substrate pressed down upon the suspension teaches away from immersing the substrate in the suspension, as set forth in independent claims 16, 31, and 48. It is by now well established that teaching away by the prior art constitutes *prima facie* evidence that the claimed invention is not obvious. *See, inter alia, In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Nielson*, 2 U.S.P.Q.2d (BNA) 1525, 1528 (Fed. Cir. 1987); *In re Hedges*, 228 U.S.P.Q. (BNA) 685, 687 (Fed. Cir. 1986).

For at least the aforementioned reasons, Applicants respectfully submit that the Examiner has failed to make a *prima facie* case that the present invention is obvious over the prior art of record. Applicants request that the Examiner's rejections of claims 16-37 and 48-54 under 35 U.S.C. 103(a) be withdrawn.

For the aforementioned reasons, it is respectfully submitted that all claims pending in the present application are in condition for allowance. The Examiner is invited to contact the undersigned at (713) 934-4050 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Danny L. Williams", is written over a horizontal line.

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